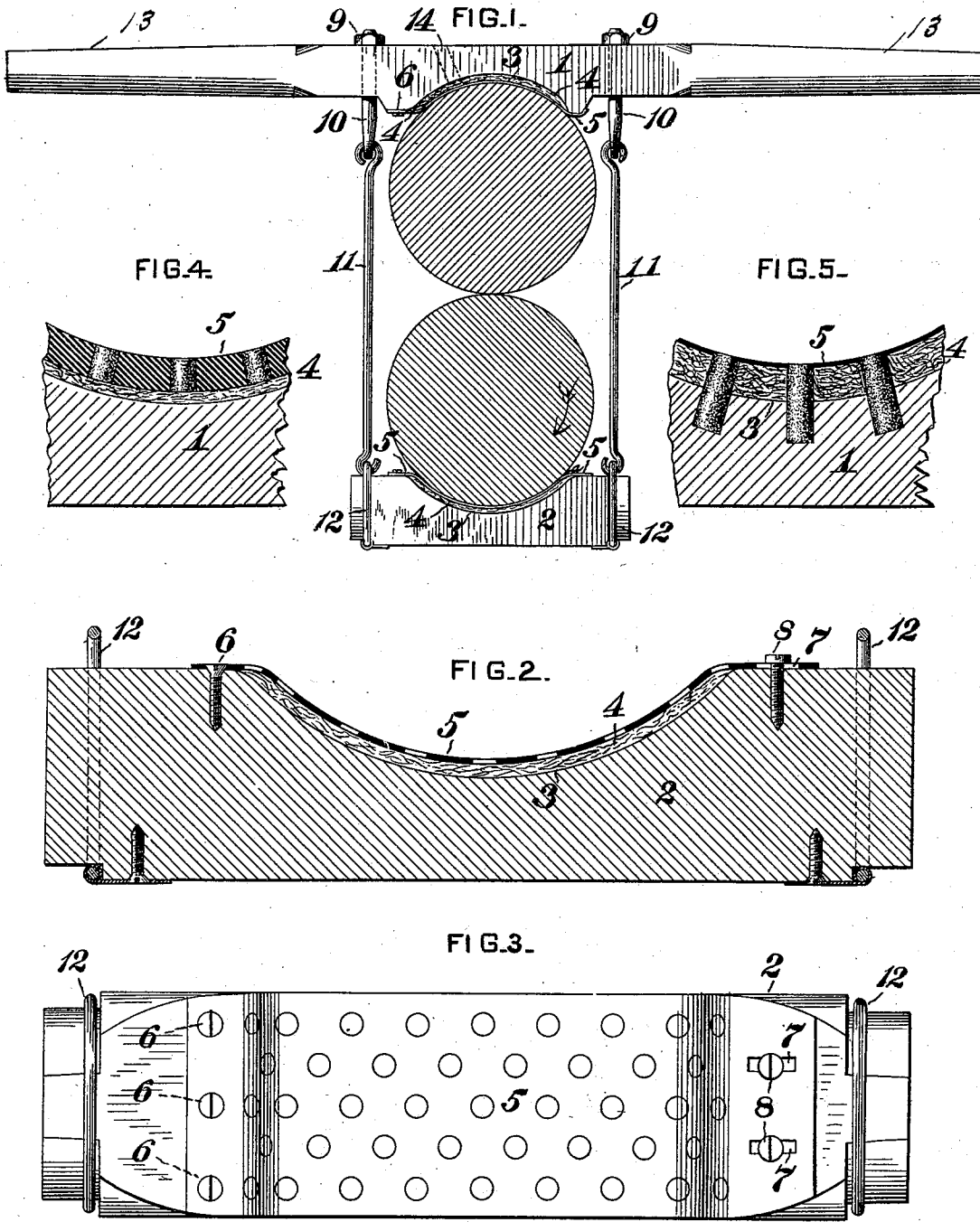


(No Model.)

J. F. BUDKE.
GRINDING AND POLISHING TOOL.

No. 504,519.

Patented Sept. 5, 1893.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN F. BUDKE, OF CANNONSBURG, PENNSYLVANIA.

GRINDING AND POLISHING TOOL.

SPECIFICATION forming part of Letters Patent No. 504,519, dated September 5, 1893.

Application filed December 21, 1892. Serial No. 455,935. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. BUDKE, a citizen of the United States, residing at Cannonsburg, in the county of Washington and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Grinding and Polishing Tools, of which improvement the following is a specification.

The invention described herein relates to certain improvements in grinding and polishing tools, especially of that class or kind which are applicable for operating on the surfaces of highly heated articles such as hot rolls.

It has heretofore been attempted to grind and polish these hot rolls by means of blocks of wood or metal provided with a circular recess for the reception of the rolls, and having an abradant such as emery distributed over the surfaces of the circular recesses. The metal blocks have been found to be inefficient for the reason that emery is carried out from between the blocks and rolls, by the movement of one or both of said parts. The wooden blocks are also inefficient for the reason that, although the abradant would be retained in proper position by being embedded in the wood, the latter is quickly charred and burned by contact with the hot rolls.

The object of this invention is to provide a rubbing plate of incombustible material having pockets or recesses for retaining the abradant in operative position.

It is a further object of the invention to provide means whereby the abradant is forced out of the pockets or recesses against the surface or surfaces to be ground or polished.

In the accompanying drawings forming a part of this specification, Figure 1 is a transverse section of a pair of rolls having my improved tool applied thereto. Fig. 2 is a sectional elevation of one part or element of the tool. Fig. 3 is a plan view of the same. Figs. 4 and 5 are sectional views showing certain modifications in the construction of the tool.

While in the accompanying drawings and the description I show and describe a form of tool especially adapted for grinding or polishing rolls, my improvements are applicable for use in grinding or polishing other articles, and the shape or contour of the tool and the means for holding the same against the article to be operated on can be substantially changed

without departing from the spirit of my invention.

The tool for grinding or polishing rolls consists of the blocks 1 and 2, each being provided with a circular recess 3 for the reception of a portion of the roll. The walls of these recesses are covered with cushions 4 formed of some yielding resilient material as felt, asbestos, asbestos cloth or board, the asbestos and materials formed therefrom being used when the article whose surfaces are to be ground or polished, is highly heated. Over this cushion is arranged a metal plate 5, provided with numerous perforations. One end of this plate is secured to the block by screws 6, while the opposite end is provided with one or more slots 7, through which passes a bolt or screw 8, serving to hold the plate from springing upon, out of place, while permitting it to be pressed against, the cushion.

In using this tool the block 1 is placed over the upper roll and the block 2 under the lower roll. They are then drawn tightly against the rolls by the nuts 9 on the bolts 10, which pass down through the upper block and are connected by links 11 with bails 12 on the lower block 2. The rolls are then revolved and the blocks shifted along them by means of the handles 13 on the block 1. The emery or other abradant may be fed between the upper roll and the perforated plate on the block 1, through a passage 14 formed through the block 1. The emery for grinding or polishing the lower roll is placed at *a* and is carried by the rotation of the roll between it and the perforated plate on the block 2. As the abradant is moved along between the rolls and the plates it is caught in the pockets formed by the perforations in the metal plates and the cushion back of said plate. As more emery or other abradant is required, the nuts 9 are screwed down a little tighter, thereby causing portions of the cushions to enter the perforations and force the abradant material out against the rolls.

In lieu of feeding the abradant material in the manner described, the abradant material described and claimed in an application filed December 21, 1892, Serial No. 455,936, and consisting of asbestos board or cloth and an abradant, may be substituted for the cushion 4, or interposed between the cushion and the perforated plate, so that when the nuts 9 are

screwed down, the abradant material may be forced through the perforations against the rolls.

As shown in Fig. 4, the emery or other
5 abradant may be made in the form of plugs and placed within the openings or perforations in the plate 5. The plugs are gradually caused to project out of the openings by the cushion 4 as the nuts 9 are screwed down, or
10 the plugs of emery may be made sufficiently long to project into recesses in the blocks 1 and 2, and be retained in position by said recesses, as shown in Fig. 5. In this construction as the emery is worn away the metal
15 plate is forced back along the plugs, compressing the cushion by screwing down the nuts 9.

It is preferred to make the blocks 1 and 2 and the handle of wood which is treated in a suitable manner, as for example, soaking in
20 sulphuric acid, to render it fire-proof.

I claim herein as my invention—

1. A tool for grinding or polishing, having in combination a supporting block, a plate provided with perforations for the reception
25 of an abradant, and a compressible cushion interposed between the block and plate and adapted to force the abradant out of the perforations, substantially as set forth.

2. A tool for grinding or polishing having

in combination a plate provided with perfora- 30
tions and a compressible cushion so arranged with reference to the perforated plate, that portions of the cushion will enter the perforations, when subjected to pressure, substantially as set forth. 35

3. A tool for grinding or polishing, having in combination a metal plate provided with perforations and a compressible cushion formed of asbestos and so arranged with reference to the perforated plate that portions of 40
the cushion will enter the perforations when subjected to pressure, substantially as set forth.

4. A tool for grinding or polishing having in combination a supporting block, a plate 45
provided with perforations, a compressible cushion interposed between the block and plate, and plugs of emery supported by the block and projecting through the cushion and openings in the plate, substantially as set 50
forth.

In testimony whereof I have hereunto set my hand.

JOHN F. BUDKE.

Witnesses:

R. H. WHITTLESEY,
DARWIN S. WOLCOTT.